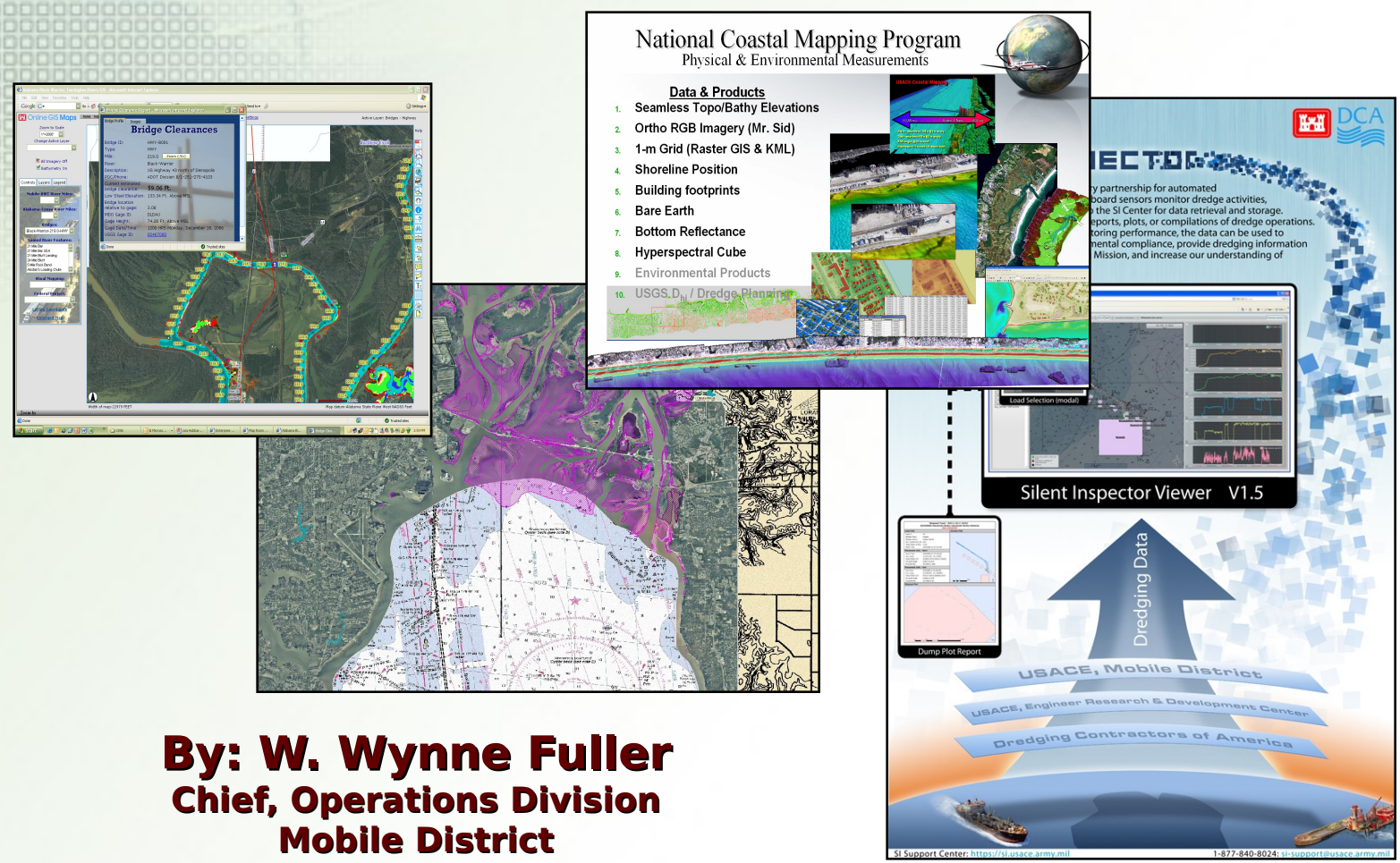
Navigation

Data Requirements for Coastal Navigation Project Planning, Engineering, Construction, and Operation



By: W. Wynne Fuller
Chief, Operations Division
Mobile District

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Introduction

- **USACE Navigation Mission**
- **Earliest Civil Works Mission (1824)**
- **Approximately 1,100 Authorized Navigation Projects**
- **Channel Maintenance & Improvement**

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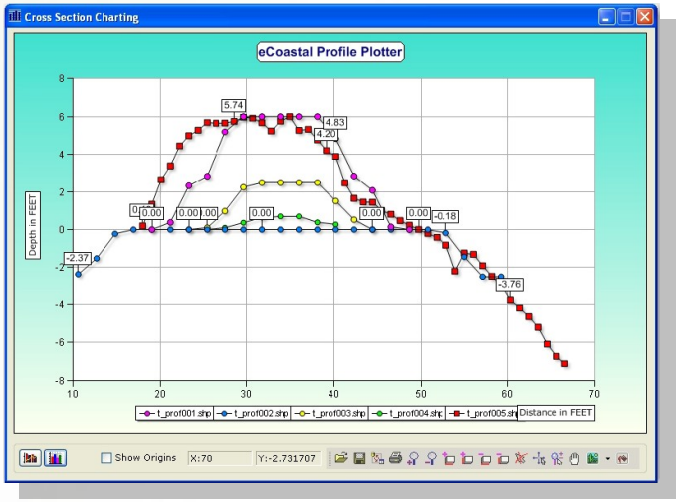
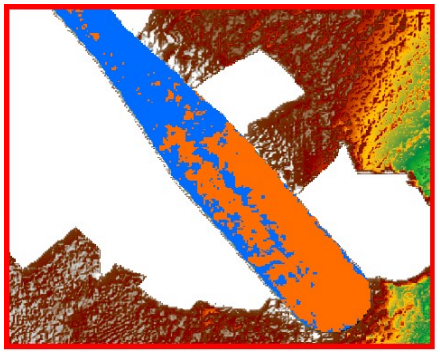
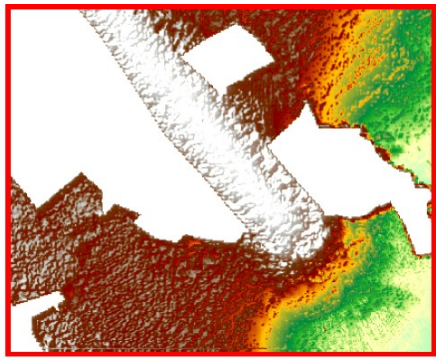
Coastal Navigation Data

- **Requirement for Data**
- **Organization of Data**
- **Important Datasets**
- **eCoastal**





Cut/Fill between Survey Data & Jetty Design



TIN of Jetty Design

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Mission Critical Decisions

- When to Dredge?
- Where to Dredge?
- Where to Place Material?
- Are there Alternatives to Dredging?
- What is the Dredge Availability?

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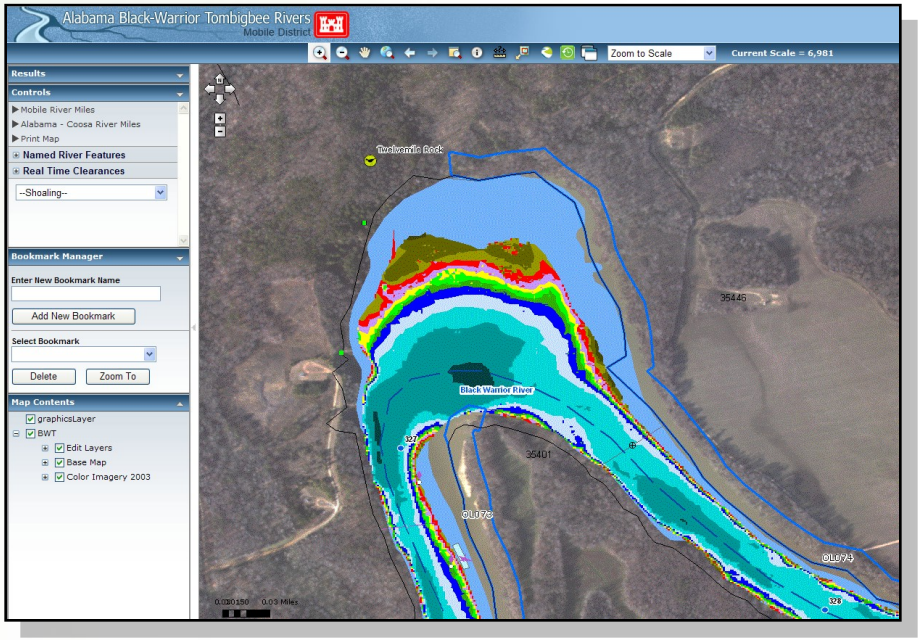
When to Dredge?

- **Where are the Shoals Located?**
- **What is the Volume of the Material?**
- **What does the Customer Need?**



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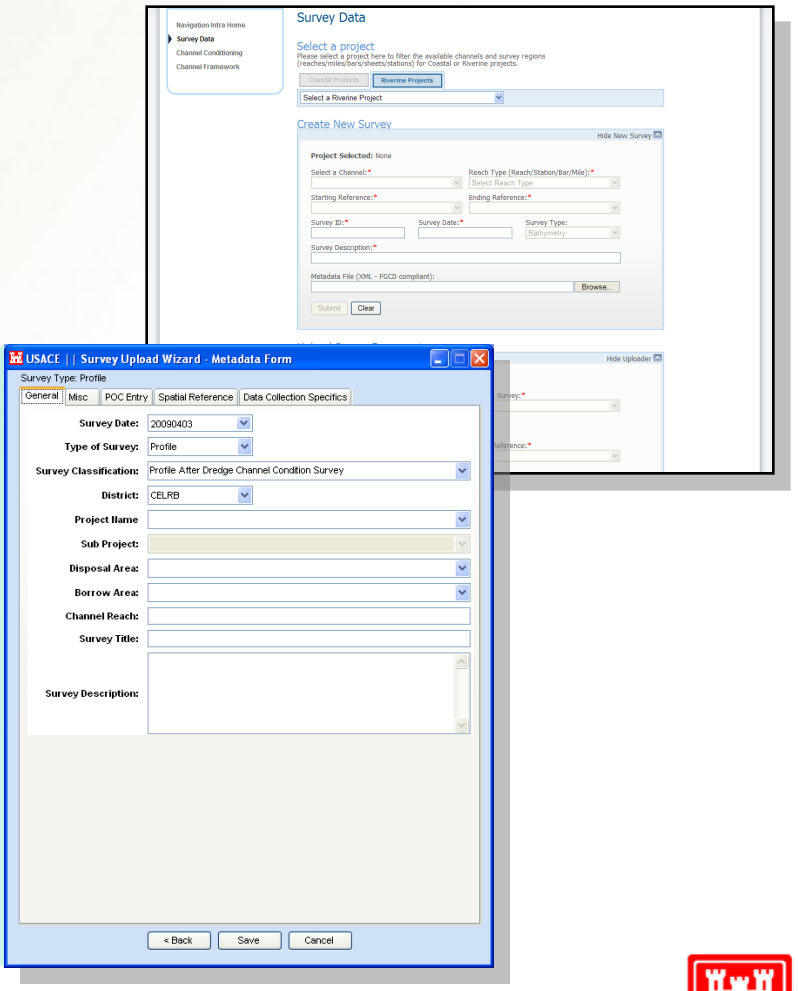
When to Dredge?

Data

- Channel Framework
- Hydrographic Surveys
- Tides
- Geodetic Control
- Maintained Dimensions
- Volume
- Stakeholder/User Input
- Environmental Data

Tools

- eCoastal/Survey Analysis & Management System (SAMS)
- HyPack
- Visualization



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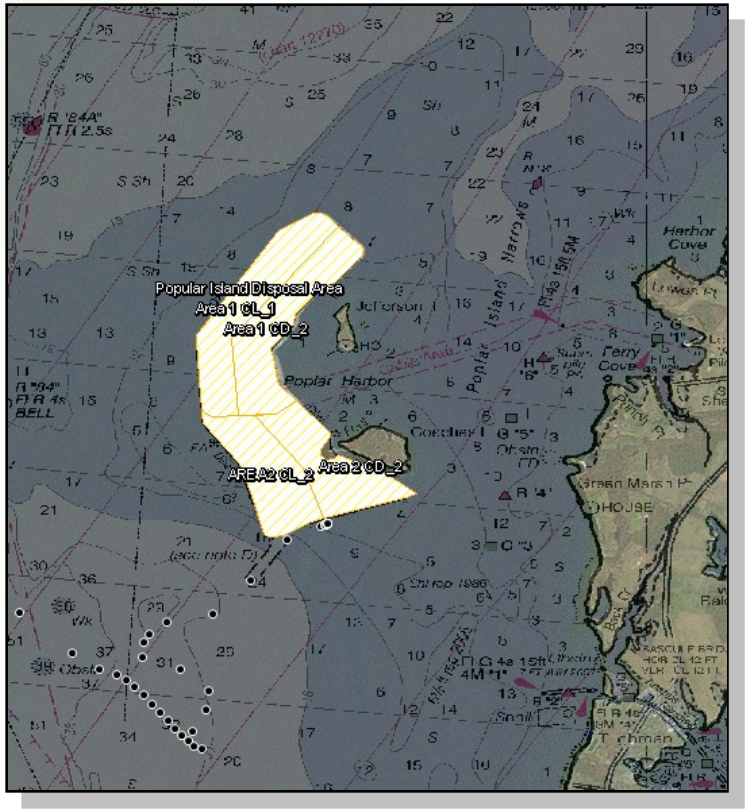
Where to Dredge?

- **What is the Economic Significance of the Channel?**
- **What Dredges are Available?**
- **What are the Environmental Constraints/Windows?**
- **What Disposal Sites are Available and their Capacity?**
- **Funding Availability?**



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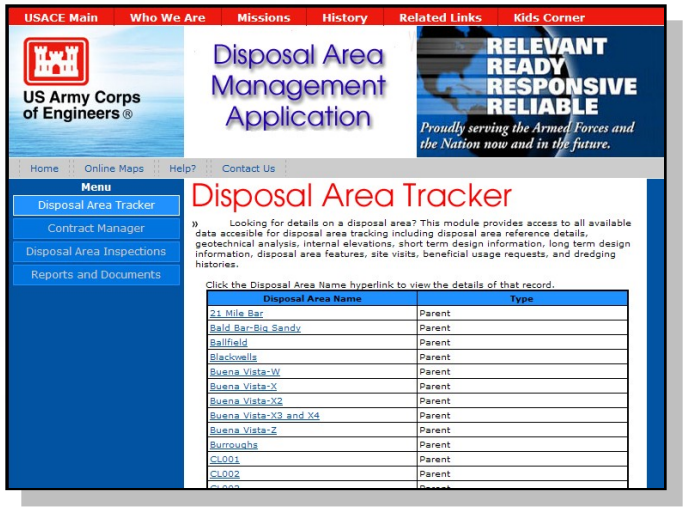
Where to Dredge?

Data

- Waterborne Commerce Data
- Corps of Engineers Financial Management System (CEFMS)
- Historical Dredging Data
- Dredge Information System (DIS)
- Disposal Site Surveys
- Geodetic Control
- Tides
- Permits
- USCG Automatic Identification System (AIS)
- Boring Surveys

Tools

- eCoastal/Disposal Area Management Application (DAMA)
- Channel Prioritization Tool (CPT) - ERDC



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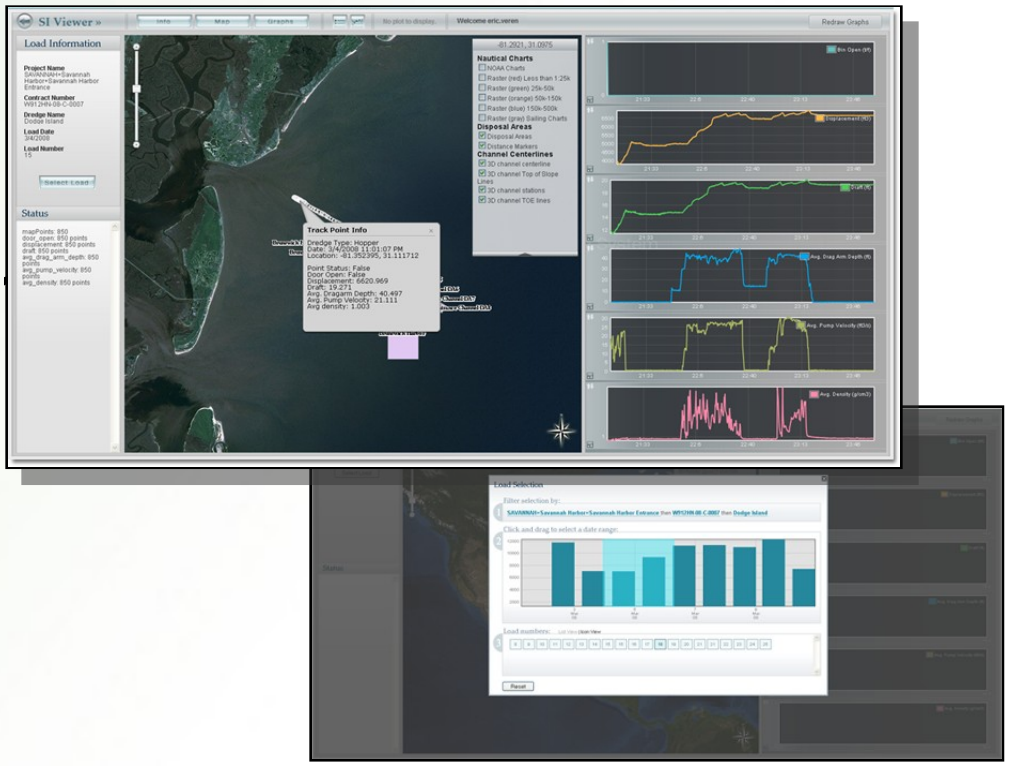
Where to Place Dredged Material?

- **What is the Availability of Disposal Sites?**
- **Which Sites are Needed**
- **What is their Capacity?**
- **What are the Regional Needs?**
- **What is the Historic Disposal Record?**



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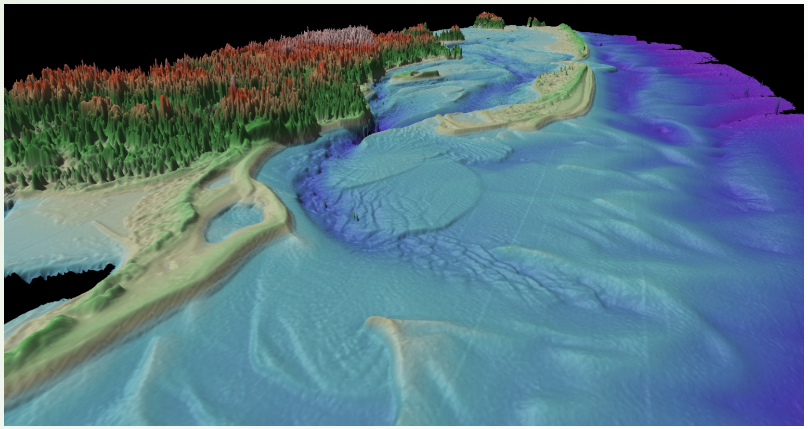
Where to Place Dredged Material?

Data

- P2
- Disposal Site Surveys
- Geodetic Surveys
- Tides
- Disposal Capacity
- Bathymetry
- Regional Elevations/Vulnerability (USGS)
- Permit Conditions

Tools

- eCoastal/Sediment Budget Analysis System (SBAS)
- SI Tools



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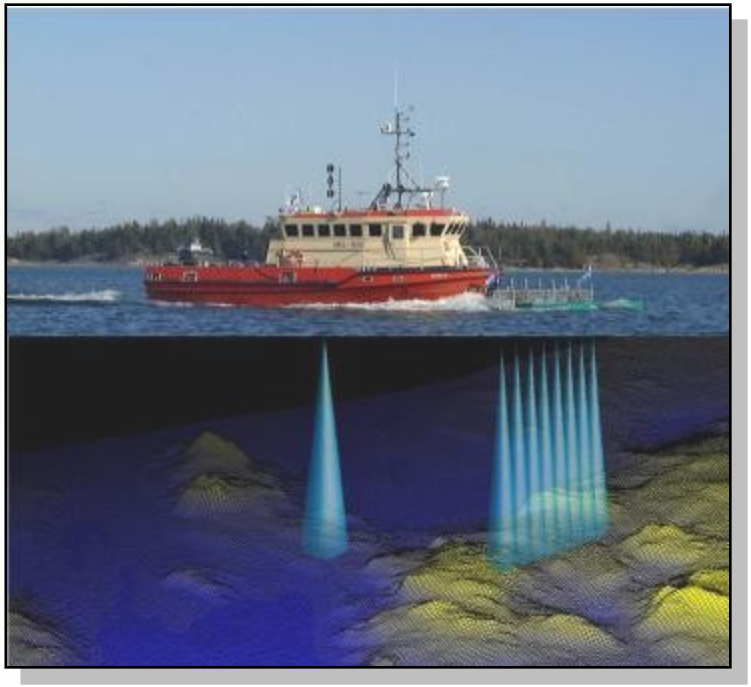
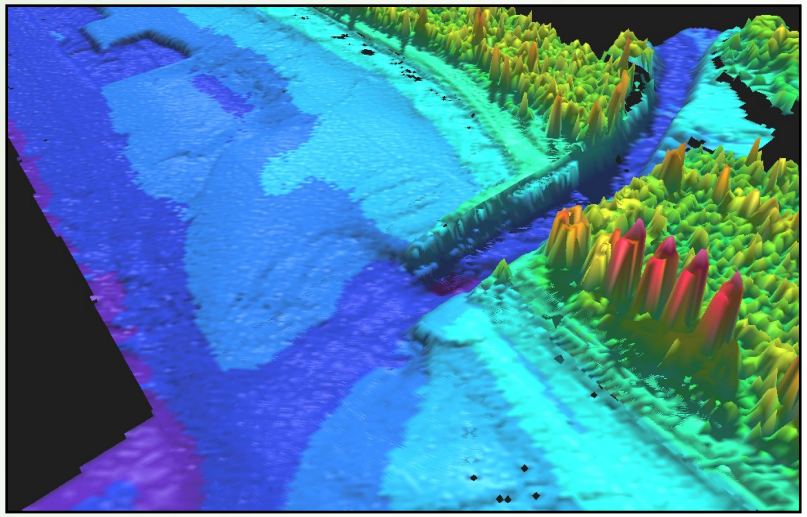
Are there Alternatives to Dredging?

- **What does the Adjacent Bathymetry look like?**
- **How long do I have before Dredging occurs?**





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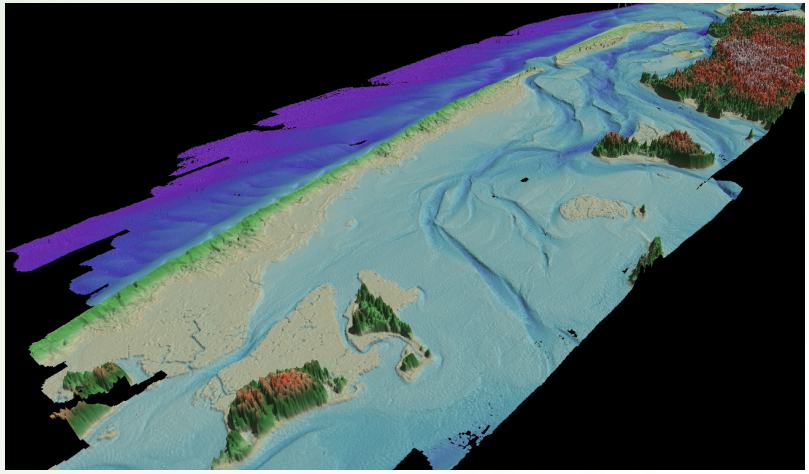
Are there Alternatives to Dredging?

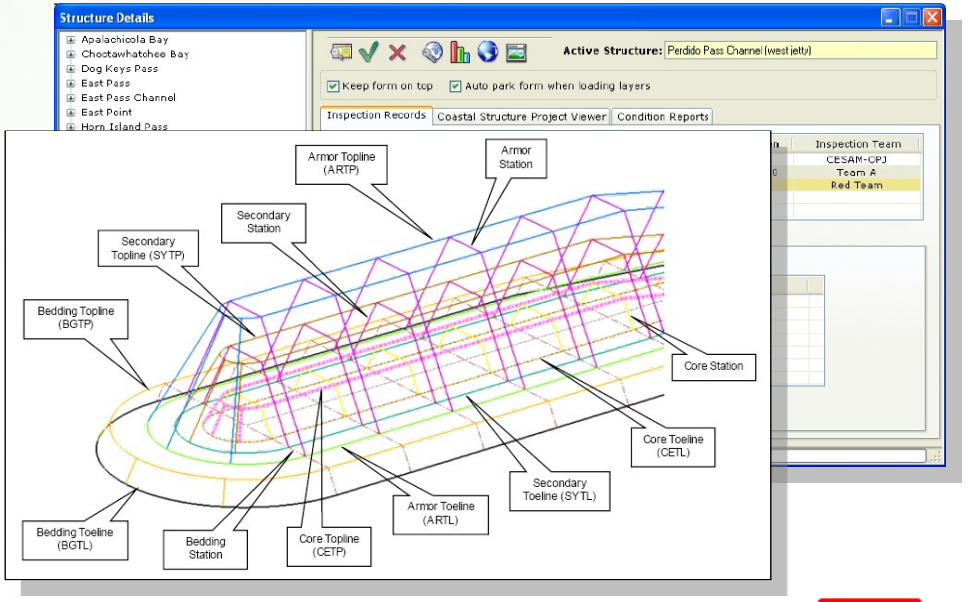
Data

- USCG Nav Aids
- RSM - Sediment Budget
- Wave Data
- Wave Information Study (WIS) -ERDC
- Channel Framework
- Coastal Structures
- Geodetic Surveys
- Tides

Tools

- eCoastal/SBAS
- CoSCA
- HyPack





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What is the Dredge Availability?

- **What is the most Effecti Contract Mechanism?**
- **What are the Regional Dredging Needs?**
- **What are the Regional Acquisition Strategies?**

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What is the Dredge Availability?

Data

- Historical Record
- Dredge Information System
- CEFMS/P2
- Stakeholders/Industry

Tools

- DIS
- OMBIL
- ICHDMG

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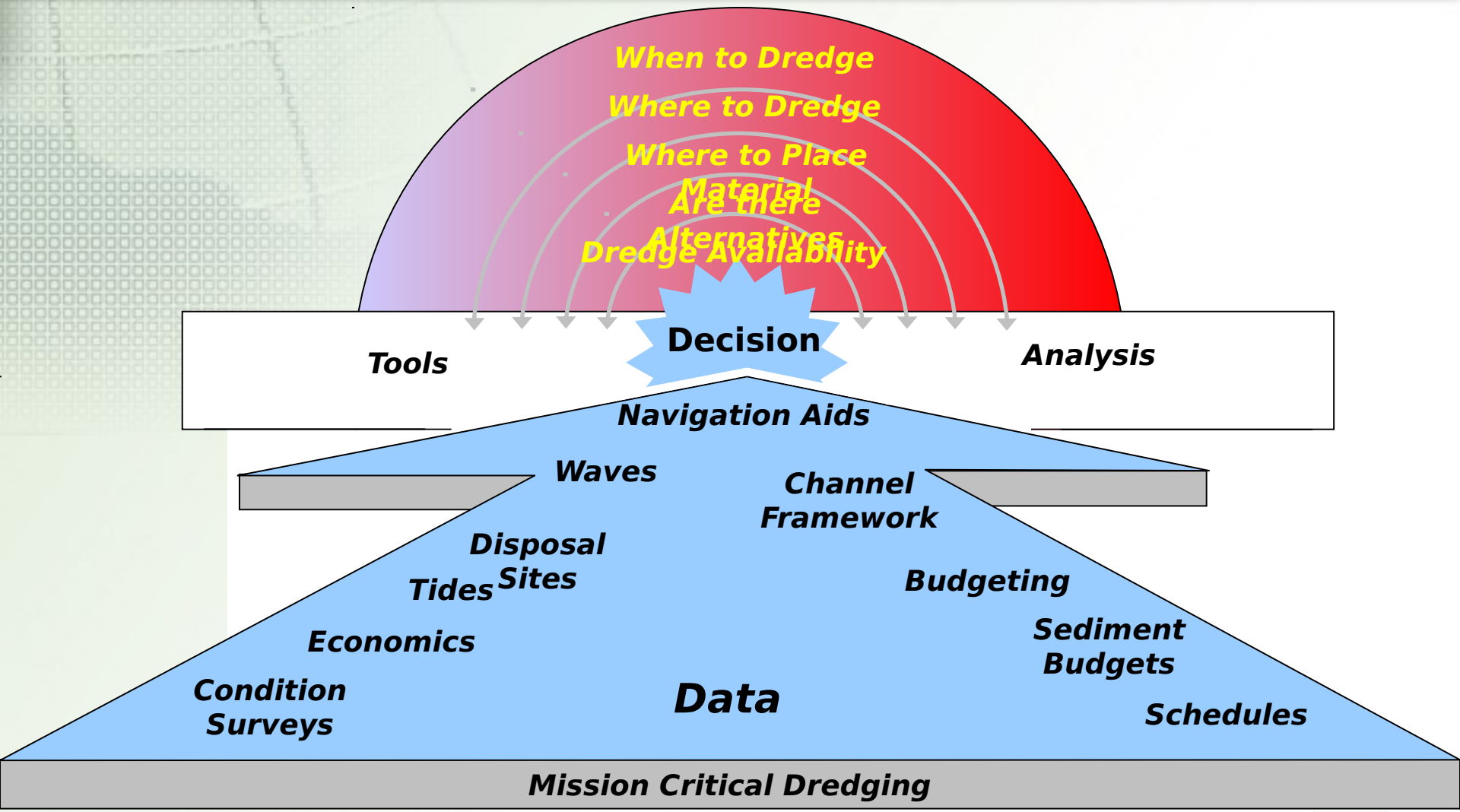
Conclusion



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Questions

Questions?

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